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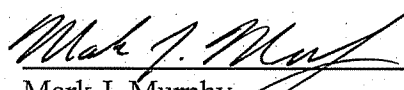
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Respectfully Submitted,



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(12) **United States Patent**
Tsutsui(10) **Patent No.:** **US 7,291,969 B2**(45) **Date of Patent:** **Nov. 6, 2007**(54) **ORGANIC ELECTROLUMINESCENT
DEVICE**(75) **Inventor:** **Tetsuo Tsutsui, Fukuoka (JP)**(73) **Assignee:** **Semiconductor Energy Laboratory
Co., Ltd. (JP)**(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 46 days.(21) **Appl. No.:** **10/628,701**(22) **Filed:** **Jul. 28, 2003**(65) **Prior Publication Data**

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(51) **Int. Cl.****H01J 1/62** (2006.01)**H05B 33/00** (2006.01)(52) **U.S. Cl.** **313/504; 313/506**(58) **Field of Classification Search** **313/498,**
313/503, 504, 506; 428/917
See application file for complete search history.(56) **References Cited****U.S. PATENT DOCUMENTS**5,229,310 A 7/1993 Sivan
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dated Apr. 16, 2007.*Primary Examiner*—Ashok Patel(74) *Attorney, Agent, or Firm*—Cook, Alex, McFarron,
Manzo, Cummings & Mehler, Ltd.(57) **ABSTRACT**

An organic electroluminescence device of the present invention adapts a new concept in its configuration to improve its efficiency in addition to obtain a high reliability and good yielding. The organic electroluminescent device having an electroluminescent film containing an organic material capable of causing an electroluminescence and being arranged between a first electrode and a second electrode, includes: a carrier generation layer, which is a floating electrode, is embodied in the electroluminescent film; an insulating film between the first electrode and the electroluminescent film, and an insulating film between the second electrode and the electroluminescent film, wherein the organic electroluminescent device is driven by an alternating current bias.

10 Claims, 9 Drawing Sheets